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| 10/590,872 | 08/25/2006 | Masashi Takai | 5048/76775 | 2925 |
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| COOPER & DUNHAM, LLP 30 Rockefeller Plaza 20th Floor NEW YORK, NY 10112 | | | EXAMINER DZIERZYNSKI, EVAN P | |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/590,872

Applicant(s)

TAKAI ET AL.

Examiner

EVAN DZIERZYNSKI

Art Unit

2875

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 August 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 August 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-945)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 8/25/06; 1/26 and 2/28 2011
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Claim Objections

Claim 1 is objected to because of the following informalities: In line 2 of claim 1, "and/or" is objected to as being indefinite. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 4, 5, and 7 are rejected under 35 U.S.C. 102(e) as being anticipated by Chen US 2004/0125458.

As for claim 1, Chen discloses a planar optical member comprising a single or multiple layers (41, Fig 3), wherein both surfaces and/or end surfaces of at least one of the layers constituting the optical member is coated with a moisture proof layer made of a material having lower vapor permeability than that of said one of the layers (waterproof layers 42 are on both sides of 41, paragraph 0024, Fig 3).

As for claim 4, Chen discloses the optical member is an optical sheet for backlight (optical member is a light guide plate for a backlight, 41, paragraph 0004).

As for claim 5, Chen discloses the optical member is an optical member for backlight having a functional layer (light emitting surface 411) on a synthetic resin

substrate (41, paragraph 0004), and both surfaces and/or end surfaces of the substrate are provided with a moisture proof layer made of a material having lower vapor permeability than that of the substrate (waterproof layers 42 are on both sides of 41, paragraph 0024, Fig 3).

As for claim 7, Chen discloses the moisture proof layer made of the low vapor permeable material is formed on the outermost surface of the optical member for backlight (421 is formed on the outermost surface of 41, Fig 3).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 8 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen.

As for claim 8, Chen discloses that the layers are waterproof, but fails to specifically state that the vapor permeability of the moisture proof layer made of the low vapor permeable material is not more than 15 [g/(m.sup.2.times.24 hours)]. It would have been obvious for one of ordinary skill in the art to make the vapor permeability not more than 15 g/(m.sup.2.times.24 hours), since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only ordinary skill in the art. *In re Aller*, 105 USPQ 233. One would

have been motivated to make it in this range to achieve a device with extremely low vapor permeability.

As for claim 20, Chen discloses one or more optical members for the backlight according to claim 4 provided inside the backlight (53, Fig 4), but fails to teach or disclose a light source placed on an end of the light guide plate. The examiner takes Official notice that light guide plates having edge-lit incident surfaces in backlight devices are old and well known in the art. It would have been obvious for one of ordinary skill in the art to configure the device of Chen to accept light from a side surface. One would have been motivated to do so to provide a light source an incident side surface for Chen that allows for a thin profile backlight device. *KSR International Co. v. Teleflex Inc.*, 550 U.S. -, 82 USPQ2d 1385 (2007).

Claims 2, 3, 6, and 13-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen in view of Ueda et al. US 2003/0026085.

As for claim 2, Chen discloses the optical member is made of synthetic resin (PC, PMMA, paragraph 0017), and both surfaces and/or end surfaces of the light diffusive plate are provided with a moisture proof layer made of a material having lower vapor permeability than that of the light diffusive plate (42 is identified as being waterproofed, to protect layer 41, which is not waterproof, paragraph 0024). Chen fails to specifically teach the optical member being a light diffusive plate. Ueda teaches an optical member that is a light diffusive plate (2, paragraph 0038). It would have been obvious for one of ordinary skill in the art to combine the light diffusive plate of Ueda with Chen, to diffuse light that exits the light guide plate of Chen. One would have been

motivated to make this combination where it is desired to produce a more diffused, even light.

As for claim 3, Chen discloses the optical member is a light guide plate made of synthetic resin (PC, PMMA, paragraph 0017) having at least one end as a light incident surface, and the surface almost orthogonal with the light incident surface as a light emergent surface (311, the top surface of 41, 31, Fig 1) and both surfaces and/or end surfaces of the light guide plate are provided with a moisture proof layer made of a material having lower vapor permeability than that of the light guide plate.

Chen fails to state whether the device as being edge-lit, and fails to specifically teach the layers being formed on both the incident and emitting side. The examiner takes Official notice that light guide plates having edge-lit incident surfaces are old and well known in the art. It would have been obvious for one of ordinary skill in the art to configure the device of Chen to accept light from a side surface. One would have been motivated to do so to provide a light source an incident surface for Chen to achieve a thin profile backlight device. *KSR International Co. v. Teleflex Inc.*, 550 U.S. -, 82 USPQ2d 1385 (2007). Ueda teaches a waterproofing layer being formed on an incident side of a light guide (paragraph 0015, 0038). It would have been obvious for one of ordinary skill in the art to apply the waterproofing layer on both the incident and exiting surfaces of Chen, to provide additional moisture protection for Chen. One would have been motivated to make this combination to provide additional moisture protection for Chen.

As for claim 6, Chen discloses the device as discussed above, but fails to specifically teach that the optical member is selected from a prism sheet, light diffusive film, light reflecting film, polarizing film, reflective polarizing film, retardation film and electromagnetic interference (EMI) shielding film. Ueda teaches an optical member that is a light diffusive sheet (2, paragraph 0038). It would have been obvious for one of ordinary skill in the art to combine the light diffusive sheet of Ueda with Chen, to diffuse light that exits the light guide plate of Chen. One would have been motivated to make this combination where it is desired to produce a more diffused, even light.

As for claim 13, Chen further teaches using a backlight comprising a light source (paragraph 0004), but fails to specifically teach that the backlight is the light diffusive plate according to claim 2. Ueda teaches an optical member that is a light diffusive plate (2, paragraph 0038). It would have been obvious for one of ordinary skill in the art to combine the light diffusive plate of Ueda with Chen, to diffuse light that exits the light guide plate of Chen. One would have been motivated to make this combination where it is desired to produce a more diffused, even light.

As for claim 14, Chen fails to state whether the device is edge-lit or backlight, and Chen discloses the light diffusive plate is provided with one or more types of optical members on the surface opposite to the light source. The examiner takes Official notice that light guide plates having edge-lit incident surfaces and backlight are old and well known in the art. It would have been obvious for one of ordinary skill in the art to configure the device of Chen to accept light from a side surface or a back surface. One would have been motivated to do so to provide a light source an incident surface for

Chen to achieve a thin profile backlight device. *KSR International Co. v. Teleflex Inc.*, 550 U.S. -, 82 USPQ2d 1385 (2007). In the event that the device is backlight, Chen shows one or more types of optical members on the surface opposite to a light source (projections 53).

In the alternative, if the device is edge-lit, Chen fails to teach or disclose one or more types of optical members on the surface opposite to the light source. It would have been obvious to one of ordinary skill in the art at the time the invention was made to rearrange the diffusing projections to the side edge, since it has been held that rearranging parts of a prior art structure involves only routine skill in the art. *In re Japikse*, 181 F.2d 1019, 86 USPQ 70 (CCPA 1950). One would have been motivated to rearrange the projections in this manner to achieve a desirable, diffused light.

As for claim 15, Chen discloses a the optical member comprises a single or multiple layers (41, Fig 3), wherein both surfaces and/or end surfaces of at least one of the layers constituting the optical member is coated with a moisture proof layer made of a material having lower vapor permeability than that of said one of the layers (waterproof layers 42 are on both sides of 41, paragraph 0024, Fig 3).

As for claim 16, Chen discloses backlight (paragraph 0004) comprising a light guide plate 41 and a light source placed on at least one end of the light guide plate (paragraph 0004), wherein the light guide plate according to claim 3 is used as the light guide plate.

As for claim 17, Chen discloses the backlight according to claim 16, wherein one or more types of optical member is placed on the light emergent surface and/or the surface opposite to the light emergent surface of the light guide plate (53, Fig 4).

As for claim 18, Chen discloses wherein the optical member comprises a single or multiple layers (41, Fig 3), wherein both surfaces and/or end surfaces of at least one of the layers constituting the optical member is coated with a moisture proof layer made of a material having lower vapor permeability than that of said one of the layers (waterproof layers 42 are on both sides of 41, paragraph 0024, Fig 3).

As for claim 19, Chen further teaches using a backlight comprising a light source (paragraph 0004), and further teaches one or more types of optical members inside the backlight (members 53, Fig 4), but fails to specifically teach that the backlight is the light diffusive plate according to claim 2. Ueda teaches an optical member that is a light diffusive plate (2, paragraph 0038). It would have been obvious for one of ordinary skill in the art to combine the light diffusive plate of Ueda with Chen, to diffuse light that exits the light guide plate of Chen. One would have been motivated to make this combination where it is desired to produce a more diffused, even light.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chen in view of Hayashi US 2005/0276072.

As for claim 9, Chen discloses the device as discussed above, but fails to teach or disclose that the low vapor permeable material comprises one or more inorganic metal compounds selected from oxides or halides of silicon, aluminum, titanium,

selenium, magnesium, barium, zinc, tin, indium, calcium, tantalum, zirconium, thorium and thallium.

Hayashi teaches a water-repellant layer made using magnesium (paragraph 0454). It would have been obvious for one of ordinary skill in the art to use the material of Hayashi with the device of Chen, to provide an alternative water-repellant layer for Chen. One would have been motivated to make this substitution to provide an alternate material for achieving a water-repellant film.

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chen in view of Hayashi US 2005/0276072, as applied to claim 9 above, and further in view of Leung US 2004/0251837.

As for claim 10, Chen fails to teach the material as being silica. Leung discloses silica as an inorganic metal compound for use in a device for waterproofing (paragraph 0038). It would have been obvious for one of ordinary skill in the art to use silica, as taught by Leung, in with the device of Chen, to provide an alternative material for the water-repellant layer for Chen. One would have been motivated to make this substitution to provide an alternate relatively inexpensive material known for its waterproofing characteristics for the device of Chen.

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chen in view of Weder US 2005/0246958.

As for claim 11, Chen fails to teach or disclose that the low vapor permeable material comprises one or more types of synthetic resin selected from vinylidene chloride-vinyl chloride copolymer, vinylidene chloride-acrylonitrile copolymer, vinylidene

chloride-acrylic copolymer, biaxially oriented polypropylene (OPP), non oriented polypropylene (CPP), cyclic polyolefin, polychloro trifluoro ethylene (PCTFE), tetrafluoroethylene-hexafluoropropylene copolymer (FEP) and tetrafluoroethylene-perfluoroalkyl vinyl ether copolymer (PFA). Weder teaches biaxially oriented polypropylene as a waterproof material (paragraph 0110). It would have been obvious for one of ordinary skill in the art to use BOPP, as taught by Weder, in with the device of Chen, to provide an alternate material for the water-repellant layer for Chen. One would have been motivated to make this substitution to provide an alternate material known for its waterproofing characteristics for the device of Chen.

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chen and Weder, as applied to claim 11 above, and further in view of Van den Bergh et al. US 2004/0070328.

As for claim 12, Chen fails to teach or disclose that the low vapor permeable material comprises vinylidene chloride-acrylonitrile copolymer. Van den Bergh teaches a low moisture-permeable film comprising vinylidene chloride-acrylonitrile copolymer material (paragraph 0052). It would have been obvious for one of ordinary skill in the art to use vinylidene chloride-acrylonitrile copolymer, as taught by Van den Bergh, in with the device of Chen, to provide an alternate material for the water-repellant layer for Chen. One would have been motivated to make this substitution to provide an alternate material known for its low moisture-permeable characteristics for the device of Chen.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to EVAN DZIERZYNSKI whose telephone number is (571)272-2336. The examiner can normally be reached on Monday through Friday 8:00 am -4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diane Lee can be reached on M-F (571)-272-2399. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Evan Dzierzynski/
Primary Examiner, Art Unit 2875